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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/082,081 | 02/26/2002 | Chulhee Lee | | 2662 |

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EXAMINER

CZEKAJ, DAVID J

ART UNIT PAPER NUMBER

2621

DATE MAILED: 09/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 10/082,081 | Applicant(s) LEE, CHULHEE | |
| | Examiner Dave Czekaj | Art Unit 2621 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-9 is/are pending in the application.
- 4a) Of the above claim(s) 8 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

On pages 1 and 4-5, applicant argues that the restriction requirement is improper since the claims should be classified in the same class. While the applicant's points are understood, the examiner respectfully disagrees. The examiner notes that the applicant previously elected without traverse claims dealing with similar subject matter as the present claims which were shown to be in different classifications. Therefore the restriction is deemed proper and made final.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (6049630), (hereinafter referred to as "Wang") in view of Chui et al. (5841473), (hereinafter referred to as "Chui").

Regarding claim 6, Wang discloses an apparatus that relates to data compression (Wang: column 1, lines 11-12). This apparatus comprises "producing source wavelet coefficients by applying a 2-D wavelet transform to each frame of source video" (Wang: figure 2, wherein the source coefficients are the coefficients after the first wavelet transform), "producing processed coefficients by applying a 2-D transform to each frame of the processed video"

(Wang: figure 2, wherein the processed coefficients are the coefficients after the second wavelet transform is performed), and “computing a difference vector whose elements represent a subband difference between a frame of source and processed coefficients” (Wang: column 3, lines 29-32). However, Wang fails to disclose the averaging and video score as claimed. Chui teaches that prior art computing systems introduce significant computational complexity in the compression and decompression systems. To help alleviate this problem, Chui discloses “producing a final difference vector by averaging the sequence of difference vectors” (Chui: figure 20, item 110L and 110H) and “producing an objective video score by taking the inner product of the final vector and a weight vector” (Chui: figure 20, column 21, lines 37-40, wherein the weighting process is the upsampling). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to take the apparatus disclosed by Wang and add the processing taught by Chui in order to obtain an apparatus that minimizes computational complexity.

3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (6049630), (hereinafter referred to as “Wang”) in view of Chui et al. (5841473), (hereinafter referred to as “Chui”) in further view of Acharya et al. (6154493), (hereinafter referred to as “Acharya”).

Regarding claim 7, note the examiners rejection for claim 6, and in addition, claim 7 differs from claim 6 in that claim 7 further requires applying a one-dimensional wavelet transform after the two-dimensional wavelet transform.

Acharya teaches that prior art image processing techniques are unable to be effectively implemented in small cost-conscious devices (Acharya: column 2, lines 60-62). To help alleviate this problem, Acharya discloses "applying a one-dimensional wavelet transform to a sequence of difference vectors" (Acharya: figures 4 and 6). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to implement the wavelet transform means taught by Acharya in order to obtain an apparatus that can cost-effectively achieve the highest video quality possible.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dave Czekaj whose telephone number is (571) 272-7327. The examiner can normally be reached on Monday - Friday 9 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DJC

Mehrdad Dastouri
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SUPERVISORY PATENT EXAMINER
TC 2600